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NTSB Order No. EA-4143

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D.C.
on the 6th day of April, 1994

DAVID R. HINSON, Administrator, Federal Aviation Administration, Complainant, v. DAVID C. VOGT, Respondent.	)	Docket SE-12269

OPINION AND ORDER

Respondent has appealed from the oral initial decision of Administrative Law Judge William E. Fowler, Jr., rendered at the conclusion of an evidentiary hearing on April 29, 1992.[1] An order of the Administrator alleged that respondent, while acting as pilot-in-command of a Hughes model 369D helicopter, failed to

[1]An excerpt from the hearing transcript containing the initial decision is attached. Respondent filed an appeal brief and the Administrator filed a reply.

properly manage his fuel supply and consequently was forced to make an unintended landing due to fuel exhaustion, thereby violating sections 91.13(a), 91.103(a), and 91.151(b) (formerly sections 91.9, 91.5(a) and 91.22(b)) of the Federal Aviation Regulations ("FAR," 14 C.F.R. Part 91).[2] As a result, the Administrator suspended respondent's commercial pilot certificate for 180 days. The law judge found that the Administrator had established only the 91.13(a) and 91.151(b) violations. He then reduced the sanction to a 120-day suspension.[3]

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[2]Since the alleged violations occurred in 1989, respondent should have been charged under the former section numbers, 91.9, 91.5(a), and 91.22(b). However, as the substance of the regulations is the same before and after the number change, this technicality is inconsequential.

The pertinent regulations read as follows:

§ 91.13 Careless or reckless operation.

(a) Aircraft operations for the purpose of air navigation. No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

§ 91.103 Preflight action.

Each pilot in command shall, before beginning a flight, familiarize himself with all available information concerning that flight. This information must include:

(a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC.

§ 91.151 Fuel requirements for flight in VFR conditions.

* * * *

(b) No person may begin a flight in a rotorcraft under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes.

[3]The Administrator appealed neither the law judge's findings

After consideration of the briefs of the parties and the record, the Board concludes that safety in air commerce or air transportation and the public interest require affirmance of the initial decision. We explain.

This case arose from events that occurred on May 17, 1989, when respondent was pilot-in-command of a Hughes 500D helicopter, model 369D, on a flight originating in Philadelphia, Pennsylvania with the purpose of enabling his passenger to take aerial photographs of a tract of land south of Baltimore Washington International Airport (BWI).[4] After completing this task, respondent headed back toward Philadelphia. According to respondent, the low fuel light illuminated just after they passed by BWI. Respondent then diverted to Martin State Airport (MTN), approximately six miles away. He eventually set the aircraft down on a muddy, grassy area about 50 feet from the runway. That it was a hard landing is undisputed.[5]

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nor the reduction in sanction.

[4]Although respondent identified his destination as "just south of BWI" (Transcript (Tr.) at 148), the aircraft's trip log showed "Wash. D.C." as the destination. (Tr. at 248.)

[5]Respondent did not deny that a hard landing occurred, and testified that he performed an autorotation landing from 100 feet above the ground. The assistant airport manager testified that he saw the aircraft go "down very abruptly." (Tr. at 77.) Two air traffic controllers testified to the same type of landing.
Respondent claims on appeal that the two controllers should not have been permitted to testify because, although the Administrator forwarded their written statements to respondent during discovery, he did not inform respondent that they would be testifying. The Administrator's First Response to "Respondent's First Request for Disclosures Production of Documents," dated January 22, 1992, lists the documents that will be used as evidence, including the statements of the two controllers. At

According to respondent, there should have been ample fuel on board to make the planned flight without stopping. He testified that the aircraft had been refueled a few days prior to May 17th, and flown for about three to four-tenths of an hour by another pilot. Before respondent took off from Pitcairn Airport, he testified, the fuel gauge read "[p]retty close to full." He first flew for about six minutes to pick up his passenger at Riverfront Heliport, then about 50 minutes to an area south of BWI.[6] They spent five to ten minutes finding the exact location and circled the property for about 15 minutes, making slow turns in order that the passenger might photograph the property from various angles. As they headed back, they went directly over BWI (therefore, another five minutes to BWI).[7] (Tr. at 144-51.) Using respondent's estimations, this amounts to between 94 and

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the end of the list it is stated that: "The Administrator will call the above listed individuals as witnesses including ATC personnel." Thus the Administrator identified the two controllers in response to the discovery request.

Respondent also objects to the testimony of the assistant line chief for the same reasons as stated above. This witness testified to refueling the aircraft and identified the receipt for the fuel purchase. A copy of the receipt was forwarded to respondent during discovery. The witness's testimony was cumulative, corroborated by other witnesses, including respondent, and regarded as a fact issue which was not in dispute, namely, the amount of fuel used in refueling the helicopter. The disputed issue was whether the helicopter had run out of usable fuel or whether the low fuel situation was caused by a mechanical malfunction. The admission if the testimony, although improper, was harmless.

[6]Respondent stated that flying time was about 45 minutes to BWI and they traveled about another five minutes after that.

[7]In fact, respondent testified, "I remember BWI specifically, looking down at the pad at Butler that I use for fuel in BWI. Butler has a facility there and we flew directly

110 minutes of flight time to this point, as well as at least three takeoffs and two landings.[8]

The Administrator argued, and the law judge found, that the aircraft came to rest due to fuel exhaustion and that respondent acted carelessly by failing to monitor the fuel gauge. We believe that the record contains sufficient evidence to support the law judge's decision.

Leo Kuneman, an FAA inspector, testified as an expert for the Administrator.[9] He stated that because the helicopter's fuel

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over it." (Tr. at 151.)

[8]The nature of the flight that was made between the time the helicopter was refueled and the subject flight is not known. There very well could have been more than one takeoff and landing involved. This adds to the uncertainty of how much fuel respondent had available because fuel consumption varies depending on the maneuvers performed. Actions requiring more power from the aircraft, such as takeoffs, circling, and hovering, expend more fuel than is used at normal cruise speed.

[9]Mr. Kuneman has an ATP multi-engine land rating, commercial pilot single-engine land and helicopter ratings, as well as instrument ratings for both. At the time of the hearing, he had about 8,000 hours total flight time, including over 2,000 hours helicopter time. Of those hours, 540 were in the Hughes 369, Model 500D, the aircraft involved in the instant case.

Respondent argues on appeal that Mr. Kuneman's testimony should be disregarded because his experience is in the military, not civilian, version of the Hughes 500. We disagree. Inspector Kuneman testified that there is not much difference between the military and civilian versions of the aircraft and that the engines are basically the same. (Tr. at 115.) He also stated that there are many small variables that would affect the performance of a Hughes 500 and, thus, two identical aircraft would not necessarily burn exactly the same amount of fuel, even if operated under similar conditions. (Tr. at 116-17.)

In any event, the differences between the two versions of the aircraft were not shown by respondent to be material to the disposition of this case. As an experienced helicopter pilot familiar with the Hughes 500, Inspector Kuneman testified to the functioning of the fuel gauge, general principles of safe operation, and his opinion of respondent's actions. He did not

consumption rate can vary significantly depending on many factors, the pilot-in-command must vigilantly consult the fuel gauge to assess the quantity of fuel available.[10] According to the aircraft manual, the low fuel light illuminates when there are approximately 35 pounds of fuel remaining.[11] Based on an average fuel burn rate of 25 gallons per hour, he opined that this would translate into a maximum of ten minutes flight time.[12]

Respondent stated in his communication with ATC and in his testimony at the hearing, that when the low fuel light or "20

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attempt to delineate the exact fuel burn rate of the aircraft in his testimony. Rather, he testified to the average fuel burn rate and factors that affect it, noting that, although fuel consumption is difficult to pinpoint for a helicopter due to its constant power variant, the engine in this model of helicopter burns an average of about 25 gallons per hour. (Tr. at 95.) Respondent, in his own testimony, stated that this helicopter should burn between 25 and 30-32 gallons per hour. (Tr. at 147.)

[10]The reason being, "[t]hat's the only indication of fuel on the aircraft." (Tr. at 92.)

[11]The aircraft manual states that 12.5 pounds (lbs) of fuel are unusable. (Exhibit A-17.) This aircraft uses Jet A fuel, as evidenced by the receipt for 87 gallons of Jet A purchased when respondent refueled the aircraft at MTN. (Exhibit A-6.) Jet A fuel weighs about 6.74 lbs per gallon. See Standard Specification for Aviation Turbine Fuels, vol. 5.01, Petroleum Products and Lubricants. Thus, 35 lbs of Jet A fuel would equal 5.19 gallons.

[12]Since 12.5 of the 35 lbs are unusable, supra, n. 9, there are 22.5 lbs of usable fuel. At a ratio of 6.74 lbs per gallon, there are 3.34 gallons of usable fuel remaining in the tank when the light illuminates. At a burn rate of 25 gallons per hour, flight time before fuel starvation would be 8.02 minutes. Even rounding the fuel weight to 6 lbs (as the inspector did), that would allow 9 minutes available time, not 20 minutes as assumed by respondent. In fact, respondent's own statement to Air Traffic Control (ATC) that, 8 minutes after the low fuel light illuminated the aircraft "cut out," supports these findings. (Exhibits A-8 and 9, tape and tape summary.)

minute light" went on, he had about 20 minutes of flight time left. Inspector Kuneman testified that, although Bell helicopters have a 20-minute warning light, this Hughes aircraft has a maximum flight time of about 10 minutes remaining from the time the warning light illuminates. (Tr. at 95-96.) See supra, n. 12.

On appeal, respondent argues that the law judge erred in his decision because a mechanical malfunction caused the helicopter to unpredictably consume more fuel than normal and thus precipitated his operation of the aircraft to a point of near fuel exhaustion. It was a faulty bleed air valve, he claims, that was responsible for the inordinate fuel consumption rate. Respondent's witness, a helicopter mechanic who performed maintenance on this aircraft, testified that he had the bleed valve replaced because "it was not within the Allison maintenance manual recommendations for closing" (Tr. at 229), and that the defect would have caused high fuel consumption. Yet, on cross examination, he could not give a range of how much or how little the fuel consumption would increase. (Tr. at 241-42.) Inspector Kuneman's testimony revealed, however, that even if this condition was present, it would have increased the fuel burn only slightly. (Tr. at 118; Exhibit A-18.) Based on information he obtained from Allison (the maker of the engine used in the Hughes 500), he concluded that an open bleed valve would increase fuel consumption from the average 25-26 gallons per hour to 28.5 gallons per hour. He reasoned that an increase of 2-3 gallons

per hour would not have had an appreciable effect on the operation of this flight. (Tr. at 247-48.)

To support his argument that there was a serious mechanical problem with the aircraft, respondent stated that the fuel gauge "dropped dramatically" after the low fuel light went on, but before that happened, the burn rate seemed normal. (Tr. at 154-56.) This assertion does not help his case, however, because even if the aircraft had consumed fuel at a slightly higher rate than usual throughout the flight, he should have noticed before reaching the point of fuel exhaustion. That the low fuel light came on sooner than he expected is not the dispositive issue. Rather, if he had properly monitored the fuel gauge all along, he would have realized that it was necessary to refuel at BWI.[13]

Due to the unusual rate of fuel consumption, respondent claims, he thought there might have been a fuel leak and consequent fire. He asserts that he did not exhaust his fuel supply, but instead intentionally cut the power to the engine and performed an autorotation from an altitude of 100 feet above a grassy area that was approximately 50 feet from the runway in order to keep a safe distance from persons and property. (Tr. at 162.) Thus, he maintains, his actions were prudent, not careless. Substantial evidence in the record suggests otherwise.

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[13]The way the fuel gauge on this aircraft is designed, there is a very small distance between the 300 lb and 400 lb (full) marks, a slightly larger distance between the 200 and 300 marks, and larger distances between 100 - 200, and E - 100. (Exhibit A-17, excerpts from Hughes 500D flight manual.) Thus, the needle on the dial may well appear to be moving faster as the fuel supply drops below 100 lbs.

For example, fuel had to be carried out to the aircraft before it was restarted and, as indicated by the receipt for the refueling, a total of 87 gallons of Jet A fuel was purchased. (Exhibit A-6.) As stated supra, the aircraft has a 90-gallon fuel capacity. In addition, after respondent landed, he replied to ATC's statement of "looks like you lost power," with

> Yeah! I believed [sic] we did here, and uh, we had a fuel low light coming in over Baltimore, which should have give [sic] us about 20 minutes, but uh, we are 8 minutes into the flight here, and **it cut out**.

Exhibit A-9, tape summary.[14] (Emphasis added.)

We question whether respondent actually believed there was a fuel leak or gauge problem when he did not attempt to land as soon as possible. Respondent admitted that he flew over some small properties in the seven miles to MTN from the time the low fuel light illuminated, but he did not land because he did not think that he and his passenger were in any imminent danger. (Tr. at 158.) Neither did respondent declare an emergency nor request fire or rescue personnel to be present at the runway. In his communications with ATC, he did not mention any suspicion of a fuel leak or fire, or that he was going to land on the grass instead of the runway.

Immediately after refueling, he and his passenger got back

[14]Respondent testified that the tape accurately reflected his communication with the MTN tower. (Tr. at 152-53.) As to this communication, respondent testified that, when he said "it cut out," he meant when he "chopped it," or "cut it out." (Tr. at 211.)

into the same aircraft and continued on to Philadelphia.[15] This does not seem like the action of a pilot who thought there was a mechanical malfunction. In addition, the aircraft was flown a total of nine times between this incident and the June 1st repair of the allegedly faulty bleed valve. Respondent was pilot-in-command of one of those flights. (Tr. at 203.)

Respondent also argues that he could not have run out of fuel because the aircraft would not have immediately started again without flushing out the system. His expert witness concurred in that assertion. Inspector Kuneman disagreed. In any event, his argument is rebutted by the purchase of 87 gallons of fuel at MTN. (Exhibit A-6.) Even if, as he testified, approximately one gallon of fuel spilled onto the tarmac, that still means that the aircraft, which has a 90-gallon capacity, was filled with 86 gallons of fuel. This is more than "pure speculation" (respondent's brief at 4), that fuel exhaustion occurred. To comply with the FARs, respondent must have had enough fuel to fly to his first point of intended landing plus an additional 20 minutes. Clearly, that was not the case. As such, we agree with the law judge that a preponderance of the evidence supports a finding that respondent operated the aircraft to the point of fuel exhaustion. The law judge made a credibility decision, disbelieving respondent's assertion that he purposefully turned the engine off before landing the aircraft.

[15]Respondent testified that in the 55-minute flight back to Philadelphia, there was no noticeable discrepancy with the gauge. (Tr. at 196.)

As such, unless arbitrary or capricious, the law judge's credibility determination will not be disturbed. Administrator v. Smith, 5 NTSB 1560 (1986).

There is abundant evidence in the record supporting the law judge's decision that respondent's inattention to his fuel supply was careless, potentially endangering the lives and property of others. Notwithstanding that decision, respondent's violation of FAR section 91.151(b) is sufficient to support a residual violation of section 91.13(a). See Administrator v. Thompson, NTSB Order No. EA-3247 at 5, n. 7 (1991).

Finally, respondent argues that a 120-day suspension is too severe a sanction, considering the circumstances and Board precedent. The Administrator maintains that the sanction is appropriate, in light of respondent's violation history.[16] See Administrator v. Mears, 2 NTSB 1943, 1944 (1975) (prior violations are relevant when determining sanction). Additionally, while a 120-day suspension is somewhat higher than existing precedent in fuel exhaustion cases,[17] we think the law

[16]Respondent's airman certificate was suspended for 45 days in 1985 for a low flight violation and for flying without a current medical certificate.

[17]The Board affirmed the following suspensions in fuel exhaustion cases: Administrator v. Pugsley, NTSB Order No. EA-3574 (1992) (60 days); Administrator v. Davis, 6 NTSB 505 (1988) (60 days); Administrator v. Brantner, 6 NTSB 228 (1988) (30-day suspension following a forced landing onto an expressway and subsequent collision with a vehicle); Administrator v. Shippee, 5 NTSB 1367 (1986) (45 days, where the respondent was forced to execute an autorotation into a wooded area, damaging the helicopter and causing injury to himself and his passengers); Administrator v. Bailey, 5 NTSB 1021 (1986) (60 days); Administrator v. Read, 3 NTSB 2694 (1980), aff'd 661 F. 2d 253

judge was entitled to weigh not only prior violation history but compliance disposition as it can be determined through observation of a respondent/witness at trial. Given that the law judge has already recommended a substantial reduction in the Administrator's proposed sanction, and given the thoroughly implausible explanation offered by respondent of his alleged autorotation, we are not prepared to reduce further the sanction imposed.

Taking into account all the evidence as well as respondent's violation history, we believe that a suspension of at least 120 days is appropriate in the instant case.

ACCORDINGLY, IT IS ORDERED THAT:

1. Respondent's appeal is denied;
2. The Administrator's order, as modified in the initial decision, is affirmed; and
3. The 120-day suspension of respondent's commercial pilot certificate shall begin 30 days after service of this order.[18]

VOGT, Chairman, COUGHLIN, Vice Chairman, LAUBER, HAMMERSCHMIDT, and HALL, Members of the Board, concurred in the above opinion and order.

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(D.C. Cir. 1981), cert. denied, 454 U.S. 1034 (1981) (90-day suspension, considering the respondent's violation history).

[18]For the purpose of this order, respondent must physically surrender his certificate to a representative of the Federal Aviation Administration pursuant to FAR section 61.19(f).